Appl. No. 09/931,631
Reply to Office Action of July 14, 2003

Docket No. RTN-108AUS

Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of the claims in the application:

1. (currently amended)   A near object detection system adapted to be coupled to a vehicle having a plurality of vehicle systems, the near object detection system comprising:

    a plurality of sensors, each of the said plurality of sensors for providing range cell data associated with a range cell in one of a plurality of in a predetermined coverage zone zones;

    a processor, coupled to receive and process the range cell data from one or more of said plurality of sensors, said processor adapted to provide a processor output signal coupled to one or more of the plurality of vehicle systems, wherein said processor includes a target tracker portion adapted to maintain track information from a plurality of targets with the track information being generated from the range cell data provided by the one or more of said the plurality of target sensors; and

    means, coupled to each of said plurality of sensors and to said processor, for sharing information between at least some from each of said the plurality of sensors.

2. (previously presented) The system of Claim 1 wherein said processor corresponds to a central sensor processor coupled to each of said plurality of sensors.

3. (currently amended) The system of Claim 1, wherein said processor is provided as a distributed processor is provided from a plurality of sensor processors, each of said plurality of the sensor processors disposed in a corresponding one of said plurality of sensors, and each of said plurality of the sensor processors having communication means for allowing information to be shared between at least some each of the said plurality of sensor processors.

4. (currently amended) A near object detection system for a vehicle, comprising:

    a plurality of sensors, disposed about a perimeter of the vehicle, each of said plurality of sensors providing data associated with a range cell detection coverage in a respective one of a plurality of predetermined coverage zones disposed about the a perimeter of the vehicle; and

5   wherein each of <u>said plurality of</u>the sensors has a respective predetermined range, angular extent,

6   and velocity range based upon respective coverage zone requirements<u>; and</u>

7   <u>a processor, coupled to one or more of said plurality of sensors, said processor adapted to</u>

8   <u>receive and process the range cell data provided thereto from the one or more of said plurality of</u>

9   <u>sensors, said processor including a target tracker portion adapted to maintain track information</u>

10   <u>from a plurality of targets with the track information being generated from the range cell data</u>.

1   5. (currently amended) The system according to claim 4, wherein the <u>plurality of predetermined</u>

2   coverage zones include two or more of an adaptive cruise control/night vision zone, a lane

3   keeping zone, a road departure zone, a side object detection zone, a backup and parking aid zone,

4   and a stop and go zone.

1   6. (currently amended) A near object detection system, comprising:

2   a plurality of sensors, each of the <u>said plurality of</u> sensors for providing detection

3   coverage in a <u>respective one of a plurality of</u> predetermined coverage zones;

4   a multiple hypothesis tracker for processing data from <u>each of said</u>the plurality of sensors

5   to make a hypothesis about data association, resolution, and/or data quality;

6   a prediction filter coupled to <u>said</u>the multiple hypothesis tracker for scheduling the

7   plurality of sensors;

8   a public track former<u>, coupled to said plurality of sensors,</u> including a discrimination

9   processor for generating data to control operation of <u>said</u>the plurality of sensors;

10   an estimator/best state vector subsystem coupled to <u>said</u>the public track former; and

11   a vehicle control crash management interface coupled to <u>said</u>the estimator/best state

12   vector subsystem and to <u>said public track former</u>.the discrimination processor.

1   7. (currently amended) The system according to Claim 6, wherein the <u>plurality of</u>

2   predetermined coverage zones includes two or more of an adaptive cruise control/night vision

3   zone, a lane keeping zone, a road departure zone, a side object detection zone, a backup and

4   parking aid zone, and a stop and go zone.

1   8. (currently amended) The system of Claim 1, wherein said processor further includes a data

2   fuser portion adapted to fuse the plurality of track information into a common filter to increase

3   performance of said~~the~~ plurality of ~~target~~ sensors.

1   9. (currently amended) The system of Claim 1~~,~~ wherein <u>said plurality of</u>~~the~~ sensors~~,~~ <u>each</u>

2   include at least one of:

3   an infrared (IR) sensor and a radar sensor.

1   10. (currently amended) The system of Claim 9, wherein ~~the radar~~<u>at least one of said plurality</u>

2   sensor<u>s</u> comprises:

3   a transmit antenna for transmitting an FMCW frequency in a plurality of transmit beams;

4   and

5   a receive antenna for receiving the FMCW frequency in a plurality of receive beams,

6   which, in combination the transmit beams, provides <u>the plurality of</u>~~a~~ pre-determined coverage

7   zone<u>s</u>.

1   11. (previously presented) The system of Claim 10, having at least one transmit beam and at

2   least one receive beam.

1   12. (currently amended) The system of Claim 10, wherein <u>each of</u> the <u>plurality of</u>

2   predetermined coverage zone<u>s</u> has <u>respective</u> zone characteristics, at least one of which can be

3   statically changed.

1   13. (currently amended) The system of Claim 12, wherein at least one of the zone

2   characteristics can be dynamically changed to provide an alteration of a time period upon which

3   <u>at least one of said plurality of</u>~~the~~ target sensor<u>s</u> processes a particular transmit beam and a

4   particular receive beam.

1   14. (previously presented) The system of Claim 9, wherein said processor is provided from a

2   central processor.

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1   15. (previously presented) The system of Claim 9, wherein said processor comprises two or

2   more distributed processors.